

**LITHOGRAPHIC APPARATUS, OVERLAY DETECTOR,  
DEVICE MANUFACTURING METHOD, AND DEVICE  
MANUFACTURED THEREBY**

**ABSTRACT**

A device according to one embodiment of the invention may be applied to measure the overlay (e.g. as a machine performance number) quickly and over an expanded range of locations (possibly everywhere) on a wafer. One method using such a device includes measuring the amplitude of a diffraction order of a diffraction pattern that results from interference between a pattern on wafer level and a pattern that is projected on the pattern on wafer level. The pattern that is projected may be present, for example, at reticle level.